

STATEMENT OF THE HONORABLE JANE F. GARVEY, FEDERAL AVIATION ADMINISTRATOR, BEFORE THE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION, SUBCOMMITTEE ON AVIATION, CONCERNING THE FEDERAL AVIATION ADMINISTRATION'S PLAN TO MODERNIZE THE AIR TRAFFIC CONTROL SYSTEM. FEBRUARY 26, 1998.

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here this afternoon to discuss the Federal Aviation Administration's plans to modernize the National Airspace System, particularly, the air traffic control system. In my testimony this afternoon, I will be providing you with an overview of the agency's most recent modernization accomplishments and a brief status report on several of our important modernization programs. I will also discuss where I think the challenges and opportunities exist for our modernization efforts in the future.

The infrastructure in which the aviation industry operates is the National Airspace System, or NAS. The NAS includes more than 18,000 airports, of which, approximately 5,400 are public use airports. It also includes 470 air traffic control towers; 176 terminal radar control facilities, called TRACONS; and 21 en route air traffic control centers (ARTCC) which handle traffic flying between airport terminal areas. There are over 34,000 items of maintainable equipment in the system – including radars, communication switches, ground-based navigation aids, computer displays, and radios that controllers use to talk to one another and to pilots.

Everyone agrees that a modernized air traffic control system is critical to the aviation community and the Nation's economic well being. The FAA has learned some hard lessons over the years. Although I have only been with the agency for a short time, it is clear to me

that the diligent oversight of Congress, the strong leadership of former Administrator David Hinson and Deputy Administrator Linda Daschle, and the hard work of a dedicated FAA workforce have put the agency's modernization program back on track.

The agency's immediate focus is on the critical need to replace the aging equipment in the air traffic control facilities. As you know, in 1995, the equipment in the en route air traffic control centers started to experience a greater number of outages for longer periods of time. The replacement of this equipment, and other aging equipment in our air traffic control facilities, has been and will continue to be the agency's modernization priority.

We have completed installation of the Display Channel Complex Rehost, or DCCR. DCCR was initiated to address the immediate need to replace controller display processor equipment at five major en-route centers—Chicago, Cleveland, New York, Washington, and Dallas/Fort Worth. This program was commissioned nine months ahead of schedule and under budget and the DCCR equipment has substantially reduced the number of outages experienced in these five centers.

Air traffic control communications is another critical component in the system that was in need of modernization. Last February, the FAA commissioned the 21st Voice Switching and Control System (VSCS) at our en route center in Jacksonville, Florida, completing one of the agency's largest acquisition programs. A National Air Traffic Controller Association (NATCA) representative recently stated that "VSCS makes a controller's job much easier by

providing quicker access to communications and much clearer communications to the end users.”

Two other critical modernization programs that are a priority for the agency are the Display System Replacement, or DSR, and the Standard Terminal Automation Replacement System, or STARS.

DSR will replace the radar displays and the computers that support those displays in the en route air route traffic control centers. New DSR displays have been installed at three en route centers and the system is scheduled to become fully operational at the Seattle center in October of this year. Based on the program’s baseline established in April 1995, the DSR program is ahead of schedule and within budget. The last DSR is scheduled to go operational in the year 2000.

The Standard Terminal Automation Replacement System, or STARS, will replace the computers and the display systems in the air traffic control towers and terminal radar control facilities (TRACON). When I came to the agency it was apparent that we had not fully addressed the human factors concerns of the controllers. In the past few months, FAA management and NATCA have made great strides in working out these issues. We are also working closely with the airway facilities technicians to resolve human factors issues associated with maintaining the equipment. Given our recent success in addressing the unions’ concerns, I am optimistic that all of the human factors issues will be resolved.

Our experience with STARS has taught us an important lesson for our continuing modernization efforts. Users of the equipment must be more actively involved in the development of new systems from the beginning to end. In an effort to develop a more formalized and systematic approach of addressing these concerns, I have formed a Human Factors Working Group. Members of the working group represent the FAA, union leadership, and industry. The working group has developed a process to identify, monitor, and resolve human factors issues throughout the entire acquisition process so that these issues do not arise unexpectedly late in a program.

I also would like to briefly discuss WAAS, the Wide Area Augmentation System. As many of you know, WAAS will augment the Global Positioning System (GPS) signal so that the signal will have the accuracy, availability, and integrity needed to meet the stringent safety requirements necessary for aviation. Generally, from a program management perspective, WAAS/IOC—which is initial operating capability—is on track and various pieces of WAAS equipment have been installed at 13 locations.

Although WAAS/IOC is moving forward, the remainder of the WAAS program faces a number of technical and programmatic challenges, most of which result from the fact that WAAS is a new, first of its kind technology. One of the critical questions we must answer concerns the number of communications satellites that will be necessary to provide appropriate levels of integrity and redundancy. There are significant programmatic implications associated with this question and it must be resolved as soon as possible.

There are other significant issues, such as a second civil frequency and the need for an independent back-up navigation system that will directly impact WAAS requirements. The FAA is aggressively seeking solutions to these issues. However, the FAA cannot resolve them alone. The aviation community, and other government interests, must come to the table and agree on an approach for implementing WAAS. I intend to do whatever is necessary to achieve this consensus.

Although challenges remain, the agency is making steady progress toward modernization. In Fiscal Year 1997, we commissioned 1,572 pieces of equipment—including systems as basic as distance measuring equipment (DME) to systems as complex as VSCS and ARSR-4. As we put this new infrastructure in place, we can begin to turn our attention toward deploying the types of systems and tools that will increase system capacity and efficiency and bring real benefits to the users of the system.

It is important that we turn our attention to system efficiency and capacity at this point in time. The expected growth in aviation, quite frankly, is staggering. Our forecasts indicate that the number of passengers carried on commercial aircraft will double over the next 15 years reaching one billion by the year 2015. This means the system will handle two passengers for every one it handles today.

To ensure that the safety and security of the aviation system is maintained in light of this growth, the White House Commission has recommended that the agency accelerate its current modernization program. And, the National Civil Aviation Review Commission has made it

clear that the expected growth in aviation cannot be safely accommodated without significant breakthroughs in air traffic modernization. It is clear to me that the recent improvements in infrastructure are just the first step toward addressing the aviation system's pressing need to increase system efficiency and capacity. This fact continues to make modernization one of the agency's most daunting challenges.

During my confirmation hearing, I made a commitment to reach out to the aviation community so that their needs and priorities could be addressed. There was no more fertile ground for outreach than the air traffic modernization. I have met and talked to a great number of people both inside and outside the agency. I want to state something very clearly from the outset, Mr. Chairman. The Government cannot modernize the air traffic control system alone. The aviation community must participate in meeting this challenge. The pressure to modernize the system quickly and safely, in conjunction with the Federal government's commitment to the American people to balance the budget, demands that everyone participate and cooperate in this process. Compromises must be made and agreements must be reached. The FAA, industry, unions, and general aviation must come to the table and decide how and when modernization will be implemented.

Toward that end, I asked senior FAA and Department of Transportation officials, union leadership, and executives and experts from the aviation community, to form a task force and fully assess our modernization program and to develop a plan for moving forward. I emphasized to each member of the modernization task force my desire for consensus and my firm belief that we must build this new system together, in an intelligent and coordinated

manner so that the FAA can safely and systematically modernize the NAS for all users while at the same time permitting NAS users to garner economic benefits that will generate the resources needed for future investments into the system.

I asked the task force to focus on two things: first--to thoroughly review the NAS architecture and; second--to examine “how” and “when” we should implement the new architecture. Let me take a brief moment to explain what I mean when I use the term NAS architecture. In 1996, the FAA began to develop a NAS modernization plan that defined what the aviation system of future would look like and what steps we should take to get there. This plan is called the NAS architecture and it has been a collaborative effort between the FAA and the aviation community.

The future aviation system set out in the architecture is called “free flight.” Free flight is a concept of air traffic management that permits pilots and controllers to share information and work together to manage air traffic. Certain tools, in conjunction with satellite-based navigation, will permit pilots to fly the most direct, cost-effective routes between takeoff and landing. With free flight, pilots will not have to fly routes structured around ground-based navigation systems. Satellite-navigation will significantly enhance free flight capability; however, many of the tools we need to start down the road toward free flight are available today.

The task force agreed that the concept of free flight, as set out in the NAS architecture, correctly defines “what” the future aviation system will look like; however, there was

considerable debate concerning “how” and “when” we get there. I am pleased to report that, due to the efforts of the modernization task force, there is a growing consensus among the aviation community on how to achieve the benefits of modernization and when we should expect to achieve them.

Because the goal of modernization is free flight, the task force developed a proposal that would bring free flight capabilities to the system sooner. There are several automation and decision making tools that are being tested now that could be introduced into the system incrementally. This incremental approach would bring user benefits to the system sooner and it would allow the FAA to modernize the NAS gradually, in a building block fashion.

These capabilities include decision support tools for conflict probe and aircraft arrival sequencing that enable air traffic controllers to improve traffic flow, which would reduce system delays. Other systems currently being tested are collaborative decision making (CDM) tools that permit the FAA and airline dispatch centers to share information to improve air traffic management on a system-wide basis. These tools will increase will increase system safety and capacity, and will provide user benefits in the form of fuel and crew cost savings.

I believe everyone can benefit from this building block approach. Users get benefits sooner rather than later. The aviation community has repeatedly emphasized to us that even the smallest increases in efficiency translate into significant cost savings. A preliminary estimate completed by a major airline shows that collaborative decision making saved the airline \$1 million in rerouting and related costs on a single bad weather day at a large hub airport. The

travelling public benefits because overall system safety is increased while the impact of delays and cancellations are reduced, saving passengers time and money. And, the FAA benefits by getting an early look at the system's performance and evaluating whether the benefits are as expected. Based on what we learn, the program can be modified to maximize benefits before the agency has expended large amounts of taxpayers' dollars.

I support this approach. My review of the FAA's modernization program has taught me that part of what has stymied modernization in the past has been going after too grand a vision and losing sight of the achievable – as someone said, making the “perfect” the enemy of the “possible.”

I have asked the RTCA Free Flight Select Committee to evaluate the technical merit of the “Free Flight Phase 1” proposal. I have also asked members of my management team to review the potential costs and benefits associated with the proposal. I hope to have both these analyses by the end of this month so I can review them in early March.

Finally, Mr. Chairman, I want to spend a few minutes discussing the task force proposal to restructure the Flight 2000 program. Based on past experience, it is clear that even the best managed programs cannot avoid delays and cost overruns when new, state-of-the-art equipment is being developed. Nevertheless, we need to find ways to increase our success in fielding large, expensive communication, navigation, and surveillance (CNS) systems.

The challenges associated with developing and deploying major CNS systems include avionics costs, equipment certification, procedures, human factors, and user acceptance. We are asking ourselves whether we can use Flight 2000 to focus specifically on learning more about these issues. It is a challenging question, but I believe that if we work together, we can develop a program, with measurable goals, that would increase our success in fielding these larger, expensive programs aimed at transitioning the NAS to a modern, state-of-the-art system.

Modernization of the NAS is a significant challenge for the FAA as well as for the aviation community. In the past, Congress has supported the agency extensively in its efforts toward modernization and reform and I look forward to continuing that working relationship with you, Mr. Chairman, and the members the Subcommittee.

That concludes my prepared remarks and I would be pleased to answer any questions you may have at this time.